

REMARKS

I Summary of the Examiner Interview

An Examiner Interview was conducted telephonically on October 19, 2007, between the Examiner and the Applicants, represented by the undersigned.

Amended claims 1 and 23, which were provided to the Examiner via a proposed amendment, were discussed. The Applicants asserted that neither U.S. Patent No. 6,577,634 to Tsukakoshi *et al.* (hereinafter referred to as "Tsukakoshi") nor U.S. Patent No. 6,947,963 to Agarwal *et al.* (hereinafter referred to as "Agarwal") teaches or suggests a router comprising a plurality of routing protocol computing entities each including a CPU and a data storage medium, where the data storage medium of a first routing protocol computing entity contains information on at least one route for which there is no information in the data storage medium of a second routing protocol computing entity.

The discussion focussed on Agarwal and the Examiner indicated that amended claims 1 and 23 appear to overcome Agarwal, subject to a new, thorough and detailed review of Agarwal.

II Summary of the Amendments

The present patent application now comprises forty-seven (47) claims, numbered 1 to 30, 50 to 55 and 59 to 69.

Claims 1, 6, 9, 16, 23, 54, 55, 59, 60 and 63 to 65 have been amended. Claims 35 and 38 to 41 have been cancelled without prejudice. Claims 31 to 34, 36, 37, 42 to 49 and 56 to 58 have been previously cancelled. New claims 68 and 69 have been added.

Support for amendments made can be found throughout the specification and drawings as originally filed. It is believed that no new matter has been added to the present patent application by the present amendment.

III Rejection of Claims 1 to 30, 35, 50 to 55 and 59 to 67 under 35 USC 103

On pages 2 to 32 of the Office Action, the Examiner rejected claims 1 to 30, 35, 50 to 55 and 59 to 67 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,577,634 to Tsukakoshi *et al.* (hereinafter referred to as “Tsukakoshi”) in view of U.S. Patent No. 6,947,963 to Agarwal *et al.* (hereinafter referred to as “Agarwal”).

As discussed below, the Applicants respectfully submit that claims 1 to 30, 50 to 55 and 59 to 67, as amended, are in allowable form. The rejection of claim 35 is moot in view of cancellation of that claim.

Independent claims 1, 23 and 65

Excerpts of claims 1, 23 and 65 are presented below, with certain elements being emphasized:

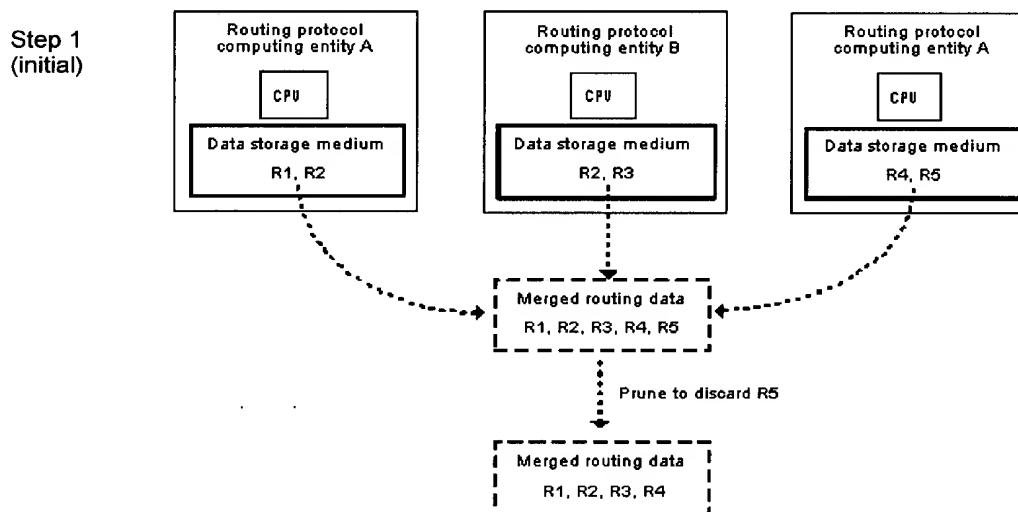
1. A router supporting multiple routing protocols, said router comprising:
[...]
- c. a routing layer in communication with said interface layer, said routing layer including a plurality of routing protocol computing entities, each routing protocol computing entity being associated with a set of at least one routing protocol and including:
 - i. a CPU; and
 - ii. a data storage medium in communication with said CPU and storing program data for execution by said CPU to cause said routing protocol computing entity to effect management of one or more peering sessions with remote routing devices according to the at least one routing protocol in the set associated with said routing protocol computing entity, said management of one or more peering sessions comprising maintaining in said data storage medium information on a plurality of routes;wherein the set of at least one routing protocol associated with a first one of said routing protocol computing entities is different from the set of at least one routing protocol associated with a second one of said routing protocol computing entities;
wherein the data storage medium of said first one of said routing protocol computing entities contains information on at least one route for which there is no information in the data storage medium of said second one of said routing protocol computing entities.

23. A router, comprising:
[...]
- c. a routing layer in communication with said interface layer, said routing layer including a plurality of routing protocol computing entities, each routing protocol computing entity being associated with a routing protocol and including:
- i. a CPU; and
 - ii. a data storage medium in communication with said CPU and storing program data for execution by said CPU to cause said routing protocol computing entity to effect management of one or more peering sessions with remote routing devices according to the routing protocol associated with said routing protocol computing entity, said management of one or more peering sessions comprising maintaining in said data storage medium information on a plurality of routes;
- wherein the routing protocol associated with a first one of said routing protocol computing entities is the same as the routing protocol associated with a second one of said routing protocol computing entities;
wherein the data storage medium of said first one of said routing protocol computing entities contains information on at least one route for which there is no information in the data storage medium of said second one of said routing protocol computing entities.
65. A router comprising:
[...]
- c. a routing layer in communication with said interface layer, said routing layer including a plurality of routing protocol computing entities, each routing protocol computing entity being associated with a set of at least one routing protocol and including:
- i. a CPU; and
 - ii. a data storage medium in communication with said CPU and storing program data for execution by said CPU to cause said routing protocol computing entity to effect management of one or more peering sessions with remote routing devices according to the at least one routing protocol in the set associated with said routing protocol computing entity, said management of one or more peering sessions comprising maintaining in said data storage medium information on a plurality of routes;
- wherein the data storage medium of a first one of said routing protocol computing entities contains information on at least one route for which there is no information in data storage medium of a second one of said routing protocol computing entities;**
[...]

Each of claims 1, 23 and 65 is directed to a router comprising a plurality of routing protocol computing entities each including a CPU and a data storage medium, where the data storage

medium of a first routing protocol computing entity contains information on at least one route for which there is no information in the data storage medium of a second routing protocol computing entity.

As discussed during the Examiner Interview, it may be beneficial to consider a simple example to illustrate the claimed subject matter. Below is shown such a simple example in which a router comprises three (3) routing protocol computing entities A, B and C, where each routing protocol computing entity includes a CPU and a data storage medium.

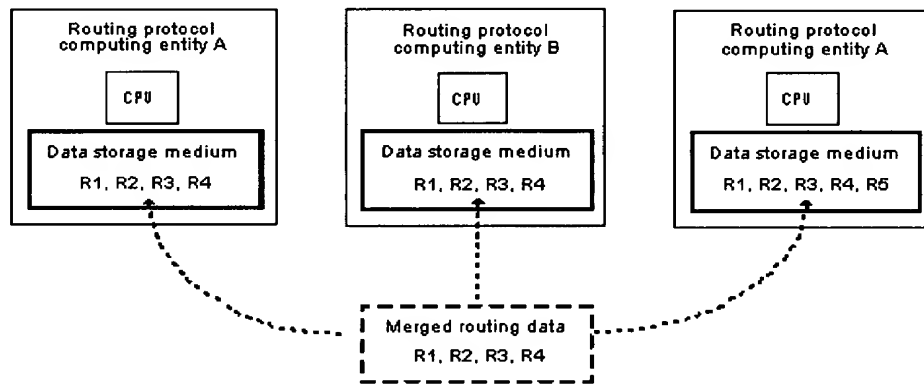


The data storage medium of routing protocol computing entity A initially contains information on routes R1 and R2 derived from one or more peering sessions that routing protocol computing entity A is involved in with one or more remote routing devices. Similarly, the data storage medium of routing protocol computing entity B initially contains information on routes R2 and R3, while the data storage medium of routing protocol computing entity C initially contains information on routes R4 and R5.

In one possible scenario (an example of which is described on page 11, line 22 to page 12, line 20 of the specification as originally filed), the router can merge routing data contained in the data storage media of routing protocol computing entities A, B and C to produce merged

routing data. In this simple example, the merged routing data thus conveys information on routes R1, R2, R3, R4 and R5. The router can then prune the merged routing data to discard a subset of the routes, say route R5, and retain the remaining routes, i.e., R1, R2, R3 and R4. As shown below, the router can then transfer the merged routing data, which has been pruned, to the data storage medium of each of routing protocol computing entities A, B and C. As a result, the data storage medium of each of routing protocol computing entities A and B contains information on routes R1, R2, R3 and R4, while the data storage medium of routing protocol computing entity C contains information on routes R1, R2, R3, R4 and R5.

Step 2
(final)



It can thus be seen that the data storage medium of routing protocol computing entity C contains information on a route, namely route R5, for which there is no information in the data storage medium of neither routing protocol computing entity A nor B. While this simple example considered a very small number of routes, it will be appreciated that in practical applications involving large numbers of routes the claimed router can provide significant processing efficiencies.

Turning now to Tsukakoshi and Agarwal, the Applicants respectfully submit that these references, whether taken separately or in combination, do not teach or suggest a plurality of routing protocol computing entities each including a CPU and a data storage medium, where the data storage medium of a first routing protocol computing entity contains information on at least one route for which there is no information in the data storage medium of a second routing protocol computing entity.

– Tsukakoshi –

Consistent with the Examiner's comments on pages 4 and 5 of the Office Action, Tsukakoshi neither teaches nor suggests the above-emphasized claimed elements. Indeed, as shown on pages 26 and 27 of the response filed on September 13, 2006, Tsukakoshi's clustered router 11 is designed to ensure that all of its route calculation units 20 have the same routing information in their memory 42. In other words, there is *duplication* of network information 16 across all the route calculation units 20. This entails that the routing information stored in the memory 42 in all of Tsukakoshi's route calculation units 20 contain information on identical sets of routes. Therefore, Tsukakoshi fails to teach or suggest the claimed element whereby the data storage medium of a first routing protocol computing entity contains information on at least one route for which there is no information in the data storage medium of a second routing protocol computing entity.

– Agarwal –

Consistent with the Examiner's comments during the Examiner Interview, Agarwal also fails to teach or suggest the above-emphasized claimed elements.

Specifically, Agarwal describes a router including control cards with processors, where each processor runs zero or more routing protocols of a complement of routing protocols and receives a full complement of routing data generated by the complement of routing protocols (column 3, line 61 to column 4, line 7; and column 4, lines 49 to 60). This is ample clear from Agarwal as a whole and in particular from a passage in column 8, lines 5 to 13 where Agarwal, in describing Figure 2, states that "the L1 [processor] for each control card *requires route data from the full complement of routing protocols*" (emphasis added).

More specifically, a central and essential aspect of Agarwal's router is that the routing database maintained by each processor is synchronized to contain route data from the full

complement of routing protocols running on all processors¹ (column 2, lines 46 to 49; column 3, lines 11 to 14, 19, 20 and 28 to 31; column 4, lines 3 to 7, 55 to 60; column 7, lines 23 to 35; and column 8, line 66 to column 9, line 3). This entails that the routing databases in all of Agarwal's control cards contain information on identical sets of routes. As such, the data storage media of all of Agarwal's control cards contain information on identical sets of routes. Therefore, Agarwal clearly fails to teach or suggest the claimed element whereby the data storage medium of a first routing protocol computing entity contains information on at least one route for which there is no information in the data storage medium of a second routing protocol computing entity.

In light of the above, it is ample clear that Agarwal and Tsukakoshi fail to teach or suggest a plurality of routing protocol computing entities each including a CPU and a data storage medium, where the data storage medium of a first routing protocol computing entity contains information on at least one route for which there is no information in the data storage medium of a second routing protocol computing entity.

Accordingly, it is respectfully submitted that at least one element of each of claims 1, 23 and 65, is neither taught nor suggested by Tsukakoshi and Agarwal, whether taken separately or in combination. As such, the cited art's failure to teach or suggest all of the claimed elements precludes a finding of obviousness in respect of claims 1, 23 and 65. The Examiner is thus respectfully requested to withdraw the rejection of claims 1, 23 and 65, which are believed to be in allowable form.

Dependent claims 2 to 22, 24 to 30, 50 to 55, 59 to 64, 66 and 67

Each of claims 2 to 22, 24 to 30, 50 to 55, 59 to 64, 66 and 67 depends on one of claims 1, 23 and 65 and thus incorporates by reference all the elements of that base claim. Hence, for the same reasons as those set forth above in respect of claims 1, 23 and 65, the Applicants respectfully submit that claims 2 to 22, 24 to 30, 50 to 55, 59 to 64, 66 and 67 are in

¹ The Examiner recognizes this on page 6 of the Office Action where he states that "Agarwal in fact shows that in Column 3:9-11 that *each processor has a copy of the master database* which is created and synchronized by the exchange of protocol specific route data between the processors" (emphasis added).

allowable form and respectfully request the Examiner to withdraw the rejections of these claims.

IV Rejection of Claims 38 to 41 under 35 USC 103

On pages 33 to 37 of the Office Action, the Examiner rejected claims 38 and 41 under 35 USC 103(a) as being unpatentable over Tsukakoshi in view of U.S. Patent No. 6,049,524 to Fukushima *et al.* (hereinafter referred to as “Fukushima”) and U.S. Patent 7,003,582 to Basso *et al.* (hereinafter referred to as “Basso”). In addition, on pages 37 to 39 of the Office Action, the Examiner rejected claims 39 and 40 under 35 USC 103(a) as being unpatentable over Tsukakoshi in view Fukushima and Basso and in further view of U.S. Patent 6,820,134 to Zinin (hereinafter referred to as “Zinin”).

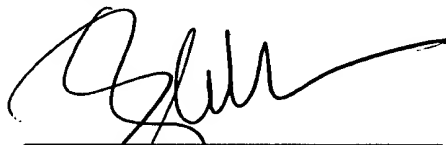
These rejections are moot in view of cancellation of claims 38 to 41.

CONCLUSION

The Applicants are of the view that claims 1 to 30, 50 to 55 and 59 to 69 are in allowable form. Favorable reconsideration is requested. Allowance of the present patent application is earnestly solicited.

If the present patent application is not considered to be in full condition for allowance, for any reason, the Applicants respectfully request the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP 707.07(j) or in making constructive suggestions pursuant to MPEP 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,



Sanro Zlobec
Agent for the Applicants
Reg. No. 52,535

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SMART & BIGGAR
1000 De La Gauchetière Street West
Suite 3300
Montreal, Quebec H3B 4W5
CANADA

Telephone: (514) 954-1500
Facsimile: (514) 954-1396